

1 **PROVISIONING OF SERVICES BASED ON DECLARATIVE DESCRIPTIONS OF A**
2 **RESOURCE STRUCTURE OF A SERVICE**

3 **ABSTRACT**

4 The present invention is directed to provisioning and managing computing services in a
5 computing utility system. It receives a Concrete Resource Model describing a desired resource
6 structure. It uses a representation of the infrastructure, including resources, configuration,
7 capabilities and constraints, as a knowledge subsystem. The method generates and executes
8 provisioning actions to affect the infrastructure resources by creating a resource structure that
9 matches the description in the Concrete Resource Model and satisfies the requirements described
10 in the input. The method can be used to create new computing services, to destroy existing
11 computing services, to modify the resource combination allocated to a computing service, or the
12 configuration of these resources. Provisioning actions, generated, can be executed immediately,
13 or saved and executed later, and possibly many times. Provisioning actions may be regenerated
14 using the method whenever infrastructure characteristics, or the service requirements change.